



DuPont Seaford Plant
400 Woodland Rd.
Seaford, DE 19973

March 28, 2000

Mr. Craig E. Yussen, Chemical Engineer
USEPA Region III
Toxic Programs and Enforcement Branch (3WC33)
1650 Arch Street
Philadelphia, PA 19103-2029

Re: Self-disclosure of possible violations of EPCRA, Seaford Plant response to questionnaire

Dear Mr. Yussen,

Enclosed is the DuPont Seaford Plant's response to the questionnaire you sent us, stamped "February 22" and received by us on March 1st. Per the March 9th letter from DuPont's David Shelton (legal counsel), this questionnaire is due March 31st (for your reference, I have attached a copy).

To facilitate your reading of our response, I've numbered it exactly like the questionnaire, and included a brief re-cap of the question in blue type. The scope of question #15 was narrowed to include only TRI violations per your discussions with DuPont's Mitch Press and David Shelton on March 20th.

In addition to the Material Safety Data Sheet requested in question #2, there is a "Attachment I" that gives background information not specifically requested in the questionnaire.

If you have any questions, I may be reached at 302-629-1268, and I've included my e-mail address below.

Sincerely,

William B. Davis CHMM
Site TRI Coordinator
(william.b.davis@usa.dupont.com)

Attachments

- Questionnaire response
- Original questionnaire
- MSDS for sulfuric acid
- Shelton March 9th memo

RECEIVED

MAR 31 2000

**TOXICS ENFORCEMENT BRANCH
EPA REGION III**

**EPCRA Section 313
Self-Disclosure Questionnaire
DuPont Seaford Plant**

Reference: DuPont letter to EPA dated 9/24/99, Sulfuric Acid

1a. Facility Information:

E.I. DuPont de Nemours & Co., Inc.
Seaford Plant
400 Woodland Road
Seaford, DE 19973

1b. Standard Industrial Classification

1996: 2821, 2824
1997: 2821, 2824
1998: 2821, 2824

1c. Number of Employees

1996: 1200
1997: 1200
1998: 1200

2. Violation Description:

The violation is a failure to submit, in a timely manner, a complete and correct Form R for sulfuric acid aerosol, a chemical subject to EPCRA section 313 reporting. The specific statute is 42 U.S.C. 11023 and the regulatory citation is found at 40 CFR 372.30.

Sulfuric Acid (CAS# 7664-93-9), which was produced as a byproduct of a power generation combustion process, Form R's were not submitted for the 1997 and 1998 Reporting Years.

1997: 97,000 pounds stack air emissions (Form R, section 5.2)

1998: 111,000 pounds stack air emissions (Form R, section 5.2)

A material safety data sheet for sulfuric acid is provided. The Agency should note that the sulfuric acid reporting issue centers around byproduct sulfuric acid aerosol from coal combustion.

3. The violation was self discovered by means of *due diligence*, a systematic effort appropriate to the size and nature of our business, to prevent, detect, and correct environmental violations.

4. Due Diligence:

Background and Corporate Information: Attachment 1

4a. DuPont's Due Diligent Practices and Procedures:

DuPont's due diligence in this matter (its **systematic** efforts to **prevent, detect, and correct** violations through appropriate compliance policies, standards, and procedures) is described below.

Prevention* :

- DuPont facilities rely upon corporate TRI experts in Engineering and Legal to review changes and revisions to existing regulations and guidance.
- When changes in regulation or guidance which have the potential to impact our facilities' compliance status occur, these experts have a system in place to disseminate that information throughout the corporation (Regulatory Guidance and Alerts).
- These changes are identified by systematic review of Agency communications mechanisms : i.e. via -- notices in the Federal Register; annual Questions &Answers; updates in compliance guidance.

*In this instance our existing prevention system did not pick up the change because :

- guidance that was updated in March, 1998 was not published in the Federal Register
- when corporate resources requested the most recent copy of sulfuric acid guidance from the Agency, outdated November, 1997 guidance was supplied
- Questions &Answers did not address the change in guidance

As a result our corporate experts were not aware of the new guidance before our TRI reports were filed with the Agency in 1998 and 1999. They first became aware of this guidance when DNREC pointed it out to Seaford personnel. Rational for our previous reporting of sulfuric acid from powerhouse stacks is described in more detail in *Attachment 1*.

Detection :

- Per our existing corporate practices, after corporate experts disseminate new compliance guidance to our sites, each site has a TRI resource who assists in interpreting how that guidance applies to their site.
- Because we were not alerted to the availability of this new guidance, in this case it was DNREC's inquiry which prompted the Seaford TRI resource to review the applicability of the new guidance to Seaford.
- Calculations were completed by the Seaford site and were reviewed with corporate TRI resources.
- Site and corporate TRI resources requested a meeting with DNREC to review the interpretations and calculations in light of the March, 1998 guidance.
- Coming out of that meeting (9/17/99), Mr. Fees confirmed DNREC's stance on the March, 1998 guidance, and the Seaford Plant agreed to report sulfuric emissions for calendar years 1997 and 1998.

Correction :

- 9/17/99 Seaford Plant became aware of the DNREC requirement to report its sulfuric acid emissions from its Powerhouse operations.
- Seven days later (9/24/99) Seaford formally notified the Agency that it would file late reports for sulfuric acid.
- Eighteen days later (10/5/99) the new Form R's were submitted to the Agency.

4b. Policies, standards, and procedures describing how DuPont employees are expected to comply with environmental requirements:

DuPont has developed comprehensive Safety, Health and Environmental policies, standards and guidelines that identify how employees and agents are to meet the corporate commitment to comply with applicable laws, regulations, permits and other sources of authority for environmental regulations. The corporate Safety, Health and Environmental Excellence Center, located at our corporate Headquarters, provides both leadership and strategic direction for all DuPont businesses in meeting their safety, health and environmental commitments to the corporation the public. Included in this task is the development of policies, standards and guidelines for areas ranging from environmental stewardship, product stewardship, process safety and management, occupational health, distribution, to community awareness and emergency response and Responsible Care®.

These policies, standards and guidelines are made accessible to all employees as part of the corporate Safety, Health and Environmental Excellence Center Global Safety, Health, and Environment Web Site. This web site assists all locations worldwide in implementing the DuPont commitment to safety, health and the environment.

At the facility level, plant-wide environmental procedures and area specific procedures reflecting environmental requirements, including procedures or programs indicating permit conditions and means of compliance (e.g., DCS monitoring), are developed. At the Seaford Plant these are available to employees via the SHEA Procedure Manual, Area Procedures, and the Site SHEA Web Page.

4c. Assignment of responsibility and accountability for ensuring corporate and facility compliance with environmental policies, standards, and procedures:

The facility manager retains overall responsibility for compliance with environmental policies and standards. Facility managers typically rely upon corporate business environmental managers and site environmental managers, working in cooperation with other business units located throughout the corporation, to provide strategic business direction and establish policies and standards necessary to meet corporate environmental goals. Within DuPont, the term "procedure" refers to a step-by-step written approach to completing an operating task. Environmental procedures, which may be developed by site Environmental Groups or Operating Area personnel, define approaches to operating tasks which are in alignment with corporate environmental policies and standards.

Each operating facility has a site Environmental Group that assumes the role of overseeing compliance with corporate policies, standards, and guidelines. These organizations vary across DuPont facilities in terms of structure and centralization. For some environmental programs a site Environmental Group may provide strategic direction to facility businesses, while for other programs the site Environmental Group provides resources for compliance with all required program elements of a regulation. Operating areas are also charged with the responsibility for implementing corporate policies and standards, which is reflected in project reviews and process modifications.

Responsibility for adherence to environmental procedures, or environmental components of operating procedures, resides primarily within the operating areas. Each employee receives training for all procedures within their area of job responsibility.

4d. DuPont's efforts to assure proper implementation of its environmental compliance policies, standards, and procedures:

The corporation employs second and third party audits for evaluating regulatory compliance with various environmental statutes. These corporate audits are management systems audits conducted with a set frequency, depending upon the environmental program protocol. The corporate audit protocols, developed for each environmental program, include an evaluation of corporate policies and standards specific to that program. These are management systems audits, intended to detect the ability of the facility to deliver consistent environmental performance in accordance with regulatory requirements and corporate guidelines. To ensure the consistency of the approach, the corporation sponsors auditor training programs required for conducting management systems audits. Information on Safety, Health and Environmental Auditing and Training is provided on the Safety, Health and Environmental Excellence Center global web page. Auditor training is an important training goal for corporate environmental professionals.

Individual sites and business typically conduct first party audits with a frequency established by the plant environmental program guidelines. Such audits would be comprised of audit team members from various operations or service organizations located at the plant or within their business. The frequency of such local audits could be monthly, quarterly or at any frequency developed in response to the site needs.

The first and second party auditing system allows a means for employees or agents to report the findings of environmental audits, without fear or retaliation, where such findings constitute a violation of environmental regulations. Programs such as EPA's self-disclosure policy allow for a notification to the Agency of suspected non-compliance, provide time for evaluation and resolution of the issue, and a mechanism for reduction in potential fines where discovery of the non-compliant activity involved an environmental audit or was as a result of due diligence on the part of the facility.

The sulfuric acid aerosol reporting error resolution reflected due diligence in corporate-wide efforts to detect and correct violations immediately upon facilities being made aware of a need to re-calculate reporting thresholds. Future first and second party audits at facilities submitting late Form R's for sulfuric acid will have information concerning this reporting deficiency provided as part of pre-audit review information. Each facility would expect TRI sulfuric acid aerosol reporting to be a specific audit item addressed during their next corporate audit. Facilities not affected by this most recent compliance issue could also expect this specific EPCRA acid aerosol reporting issues to be addressed by any corporate EPCRA auditor.

4e. DuPont's efforts to communicate environmental compliance standards and procedures to its work force:

The corporate Safety, Health and Environmental Excellence Center maintains the Global Safety, Health, and Environment Web Site in order to assist all locations worldwide in implementing corporate commitments regarding safety, health and the environment. This web page provides access to all corporate policies, standards, and guidelines. In addition, the web page provides information on our global corporate environmental progress report, a list of Safety, Health and Environmental Managers for each business, TRI contacts for each facility, summaries of corporate TRI emissions, regulatory communications supporting TRI reporting and corporate TRI resources.

Access to the internet has been phased in over the last 12-24 months along with a corporate transition to Lotus Notes, which has provided greater ease of access to such information. Nearly all employees have workstation computer access to the corporate intranet as well as electronic mail accounts. As access to the corporate intranet increases, web pages have been upgraded to reflect the demand for electronic access to information.

4f. DuPont's procedures to detect, correct, and prevent recurrence of environmental violations:

DuPont utilizes a corporate Environmental Stewardship Waste & Emissions Network, an electronic network of business, plant and leveraged services environmental contacts, for communication of EPA proposed rules, final rules and compliance guidance. Each Agency action is assigned an Issue Champion whose role it is to follow an issue from the proposed rule stage through to finalization and implementation at DuPont facilities. The Issue Champion is supported by a Focus Group of plant, business or leveraged services volunteers with a stake in the specific issue or an interest in contributing to the development of compliance guidance specific to DuPont facilities. The Issue Champion and Focus Group convene conference calls and utilize a specific corporate electronic communications format to alert the EPCRA Networks contacts of regulatory changes, including significant changes in reporting guidance. Each plant and business has an EPCRA section 313 TRI Coordinator who, in turn, communicates EPCRA requirements through their plant network of Area TRI Coordinators responsible for their specific manufacturing or service area of the plant.

Communications intended to initiate prompt and appropriate correction of violations would utilize the above network or be directed at those specific business and plant contacts known to be affected by an issue. The procedure for modifying our corporate TRI reporting program to prevent future sulfuric acid aerosol reporting violations will take the form of modifications to our corporate Regulatory Compliance Guidance for Facilities Generating Steam and Electric and may result in a separate Regulatory Compliance Guidance specific to sulfuric acid aerosol reporting. As a result of the new understanding concerning sulfuric acid aerosol reporting, the issue was addressed as part of a DuPont Regional Environmental Coordinators meeting attended by several TRI Coordinators whose facilities operated coal boilers.

5. Environmental Audit: Not Applicable

6. The violation was discovered by:

William B. Davis
Environmental Engineer
E.I. DuPont de Nemours & Co., Inc.

7. No, the violation was not identified through an activity that DuPont was legally required to perform.

8. The date the violation was initially discovered was **September 17, 1999**.

Circa July 28th, 1999, Bill Davis received a telephone inquiry from DNREC's TRI coordinator, David Fees. Mr. Fees had recently received the 1998 TRI data, and had questions regarding threshold determination calculations for Sulfuric Acid from combustion processes. Mr. Davis explained that his understanding was that the conversion of SO_x to H_2SO_4 was outside of the stack and therefore not TRI reportable. Mr. Fees then suggested the EPA compliance document "EPA-745-R-97-007" (March 1998 revision).

After receiving the EPA compliance guidance, Mr. Davis calculated a new threshold determination on August 3rd, 1999. Mr. Davis then forwarded his calculation and the EPA guidance to DuPont corporate TRI consultants, Mitch Press and John DeRuyter. After reviewing the guidance, a meeting was held on September 17th, 1999 with Mr. Fees to determine DNREC's interpretation of the EPA guidance. After receiving Mr. Fee's interpretation, Mr. Davis performed further calculations on September 21st and submitted the 10-Day Notification letter on September 24th.

9. Yes, the violation was disclosed within 10 days of initial discovery via the September 24, 1999 letter from Bill Davis to EPA's Samantha Fairchild, which was confirmed by a return letter from the EPA dated September 27, 1999.

10. No, DuPont has not received prior notification of a citizen suit or third party legal action.

11. No, DuPont did **not** receive notice of a planned inspection or investigation.

12. To correct the problem and remedy the violation, Mr. Davis performed further threshold determination calculations on September 21st for the previous reporting years and submitted the 10-Day Notification letter on September 24th. TRI coordinators across the corporation were alerted to the DNREC interpretation. New 1997 & 1998 Form R's for the Seaford Plant were submitted on October 5th, 1999.

13. To prevent reoccurrence, Mr. Davis has included EPA compliance document EPA-745-R-97-007 into the Seaford Plant's TRI file, which is used each year for threshold determination calculations.

14. Within the preceding 3 years, there were **no** notices of violation, enforcement actions or settlements related to this violation or a closely related violation for the Seaford Plant.

15. Per the 3/20/00 telephone call between EPA's Craig Yussen and DuPont's Mitch Press and Dave Shelton, question #15 has been focused on TRI violations.

DuPont entered into a TRI Consent Agreement and Consent Order with EPA Region II in September 1999 under the EPCRA Enforcement Policy for four DuPont facilities which had voluntarily submitted Form R's after the reporting date. This Consent Agreement is referenced as Docket No. EPCRA-02-99-4107. A description of these reporting deficiencies follows.

Several DuPont facilities located in Region II discovered such reporting errors and promptly self-disclosed and corrected the reporting omissions. DuPont Chambers Works submitted revised Toxic Release Inventory Reports for one chemical in 1994, two chemicals in 1996 and three chemicals in 1998. Similar self-reporting and correction occurred at the Parlin, NJ, Rochester, NY, and Yerkes (Buffalo), NY DuPont sites.

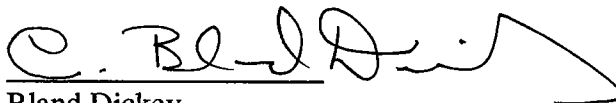
During that period, DuPont worked cooperatively with the EPA to resolve any and all reporting deficiencies for DuPont facilities located in Region II. A collaborative search of DuPont Region II facilities revealed that DuPont self-corrected at four facilities for a total of 10 different compounds. By contrast, the DuPont company has 65 sites nationwide reporting compounds under EPCRA, and in reporting year 1998 submitted approximately 850 reporting forms.

DuPont and EPA reached a settlement agreement for these reporting deficiencies. These deficiencies relate solely to the timeliness of the reports. In no instance was there any endangerment to human health or the environment, nor at any time was there any release in excess of any permitted levels. None of the facilities involved in this settlement have had any history of prior EPCRA reporting violations. Moreover, all reporting deficiencies were discovered by DuPont, self-corrected, and voluntarily self-disclosed to the EPA.

16. The violation did **not** result in any serious actual harm to human health or the environment. Boilers were operated within existing Air Permits issued by DNREC.
17. The violation did **not** present or have the potential to present any form of endangerment to public health or the environment.
18. The violation did **not** violate a judicial or administrative order or consent agreement.

Certification

I certify that I am fully authorized by the DuPont Corporation to provide the above information on its behalf to the U.S. Environmental Protection Agency regarding DuPont's self-disclosure of potential environmental violations as described in its letter dated September 24, 1999. I certify under penalty of law that this response and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment of knowing violations.



Bland Dickey
Seaford Plant Manager

3/28/00
Date

Attachment 1

The information below recounts DuPont's interpretation of the previous guidance; how that guidance was revised; how DuPont learned of EPA's interpretation and took reasonable and immediate steps to confirm and conform to EPA's interpretation. DuPont believes that the diligence of its network of environmental personnel led to the discovery of potential reporting errors and the prompt correction of such errors. Similarly, the environmental network was utilized in preventing recurrence of such issues.

The 1997 Guidance

EPA's 1997 Guidance for Reporting Sulfuric Acid details the processes which could generate sulfuric acid, and discussed the forms it considered reportable under the TRI. The Guidance concedes that although sulfur trioxide (SO_3) has a great affinity to combine with H_2O to form sulfuric acid (H_2SO_4), the combination is dependent upon the presence of moisture, and a temperature low enough, to facilitate the reaction. Put another way, the EPA recognized that stack temperatures could be high enough, or moisture so low, so as to release un-reacted SO_3 out of the stack, instead of a form of sulfuric acid. EPA concluded that in such situations the SO_3 is not reportable: "Therefore, if SO_3 is the chemical that is released from the facility, the facility is not required to include it, or any H_2SO_4 produced in the environment from the released SO_3 in any EPCRA section 313 calculations of thresholds of releases." (EPA-745-R-97-007, section 3.0).

Thus, with increasing moisture and decreasing temperature, SO_3 would first convert to sulfuric acid vapor or gas, then, at the appropriate dew point, would convert to a sulfuric acid mist, then ultimately to a condensed liquid. The Guidance makes it clear that the ends of these reactions (SO_3 and condensed sulfuric acid liquid) were not reportable. The Guidance also makes it clear that with information on the dew point, one could determine the amount of sulfuric acid mist being "manufactured" in the stack. The Guidance even provided dew points for various sulfur content fuels.

Based on this Guidance, site technicians would compare their specific stack temperature with the dew point calculations. If the stack temperature was above the dew point, no sulfuric acid mist was being formed. There was, admittedly, a potential for sulfuric acid gas to be formed at such high temperatures, but there was no information to indicate, in the Guidance or through readily available information, whether specific conditions had sufficient moisture content, and the temperature was not too high, for the formation of the gas phase. Historically, DuPont has used the Guidance to compute the volumes of sulfuric acid mist manufactured within the stack. In the absence readily available information, and EPA's apparent recognition in the Guidance that SO_3 could be emitted given a high stack temperature, DuPont reported on all sulfuric acid manufactured below the dew point, and concluded that emissions above the dew point were non-reportable SO_3 .

The 1998 Guidance

The March 1998 Guidance made subtle changes which in hindsight reflect EPA's emphasis for the reporting party to assume all SO_3 is converted to H_2SO_4 . The changes were not immediately evident, from a procedural as well as substantive standpoint.

Procedurally, part of the confusion may be attributed to the fact that our facilities contacting the RCRA Hotline requesting a hard copy of the updated sulfuric acid guidance continued to receive the outdated November 1997 version well into 1999, and thus were unaware of important changes to the guidance. Additionally, there was no notice in the Federal Register announcing the availability of updated guidance or, when a copy was obtained, there was no cross-walk to indicate substantive changes.

The 1998 Guidance reemphasized the value of the use of dew points in calculating reportable mists, as was DuPont practice. However, the Guidance emphasized that although dew points may be relevant to determining the quantity of mist, that the gas form should also be included, despite the absence of readily available information indicating its presence. In other words, the 1998 Guidance could be read to suggest that a reporting party assume full conversion of SO_3 to H_2SO_4 and report all emissions as H_2SO_4 .

This was a change not only from the 1997 Guidance but also from a reporting system which required reasonable estimates based on readily available information. If the EPA was now requiring reporting parties to assume full conversion, this would be in effect a presumption of reportability, despite the lack of information indicating presence or absence.

Technical Issues On the Presumption of Full Conversion

This presumption of full conversion seemed to be overly conservative given the number of technical parameters which could influence the amount of conversion. A brief technical discussion is important in understanding DuPont's position.

In general, the conversion of SO_3 to H_2SO_4 is essentially instantaneous at certain temperature ranges with the normal level of water present in flue gas. Above about 400C (752F), almost all SO_3 is in the vapor state. Between 400C (752F) and 205C (400F), the SO_3 vapor reacts with water vapor to form H_2SO_4 vapor. At temperatures below 205C (400F), essentially all SO_3 is converted to H_2SO_4 ; below the acid dew point, condensation occurs and the gas stream consists of an approximate equilibrium mixture of H_2SO_4 liquid aerosol and H_2SO_4 vapor. H_2SO_4 can also dissociate back to SO_3 and H_2O , increasingly so at higher temperatures, with about equal SO_3 / H_2SO_4 concentrations at about 250C (482F). Therefore, the final stack exit quantity of H_2SO_4 vs. SO_3 produced by combustion can vary depending on specific stack conditions, principally fuel sulfur level, excess air level, and stack exit temperature.

H_2SO_4 can also dissociate into SO_3 and H_2O , with equilibrium concentrations being about equal at approximately 250C (482F). At higher temperatures, SO_3 dominates, and at lower temperatures, H_2SO_4 dominates. It is not known if the flue gases would reach equilibrium prior to stack exit, so is possible that the dissociation would be incomplete and H_2SO_4 would remain following the rapid conversion from SO_3 . This unknown factor would result in less H_2SO_4 being emitted than total conversion of SO_3 to H_2SO_4 would indicate. The higher exit gas temperature cases would see more SO_3 than H_2SO_4 from this dissociation as well as from a lesser tendency to convert from SO_3 to H_2SO_4 in the first place. This discussion serves to illustrate that it is very difficult to exactly determine the proportion of SO_3 and H_2SO_4 at the stack exit.

It is also difficult to sample flue gas and differentiate between the sulfur species, particularly when EPA reference methods are used. The reference methods typically maintain the initial particulate filters at a temperature below the acid dew point, thus condensing any acid prematurely vs. what would be experienced at the stack exit.

In conclusion, there are a number of parameters which would indicate that an assumption of full conversion is not warranted. Based on readily available information, and in the absence of data indicating the contrary, DuPont assumed the non-reportable emission of SO_3 .

Change in Position

Prompted by DNREC's inquiry into Seaford's reporting of sulfuric acid, the site reviewed its logic for the reporting of sulfuric acid in light of the new guidance and arranged a meeting with DNREC and corporate TRI experts on 9/17/99. Corporate TRI experts engaged in discussions with EPA personnel on 10/6/99.

Our discussions with the DNREC and EPA clarified our understanding that sulfur trioxide conversion to sulfuric acid gas or mist after exiting stacks operating at temperatures above the dew point would not be counted towards EPCRA section 313 manufacturing thresholds. Thus, the transformation of SO_3 to H_2SO_4 in the environment is not used for threshold calculation purposes. However, discussions also centered upon the potential for acid gas to be manufactured in the firebox of industrial boilers. In this regard, the Agency indicated that their guidance is intended to assume SO_3 undergoes immediate transformation to sulfuric acid gas. This mechanism occurs in large part due to the presence of moisture in combustion air and fuels. It is this instantaneous transformation of SO_3 to H_2SO_4 gas or vapor prior to the stack that was a point of confusion for our reporting facilities and was not entirely clear in the published acid aerosol reporting guidance. Instead, our facilities focused entirely upon stack conversion of sulfur trioxide (SO_3) to sulfuric acid mist by using dew point calculations. The Agency suggested that DuPont assume and report full conversion of SO_3 , despite the possibility that stack temperature could disassociate the H_2SO_4 into SO_3 prior to stack exit. The Agency did not go so far as to say that DuPont's interpretation was incorrect, but that going forward a more consistent interpretation would be to assume full conversion.

DuPont believes that its previous interpretation and reporting procedure were in accordance with best readily available information and guidance. Although DuPont believes it was diligent in discovering and responding to DNREC and EPA's position once it learned of that position, and is claiming such diligence as a mitigating factor under the Audit Policy, DuPont reserves the right to contest, in the event of enforcement, whether its actions constitute reporting violations under SARA 313.